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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,426	03/12/2004	Michael Kozee	224488	8413

23460 7590 07/26/2005

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EXAMINER

KOSLOW, CAROL M

ART UNIT PAPER NUMBER

1755

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/800,426

Applicant(s)

KOZEE ET AL.

Examiner

C. Melissa Koslow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-157 is/are pending in the application.
- 4a) Of the above claim(s) 4, 114-116, 119 and 121 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-41, 44, 46-77, 80, 83-102, 104-113, 117, 118, 122-143, 146-157 and 443 is/are rejected.
- 7) ☒ Claim(s) 42, 45, 78-82, 103, 120, 144 and 145 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/31/05; 3/12/04
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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In the restriction requirement of 26 April 2005, it should have stated that the second restriction under 35 USC 121 was applicable if applicants elected the non-luminescent colorant species, not if applicants elected the luminescent colorant species as stated.

Applicant's election with traverse of the luminescent species and Group I, claims 1-3, 5-113, 117, 118, 120 and 12-157 in the reply filed on 26 May 2005 is acknowledged. The traversal is on the grounds that the species election was erroneous since the number of species was not unreasonable and the search for both species would be a serious burden and the fact Groups II and II has the same classification and the search for Group II may overlap that for Group II. This is not found persuasive because the subject matter of group III is unrelated to the subject matter of groups I, I' and II. Thus the search for the method of Group III is not required for the search for the process of Group II or the inks of Group I and I. The restrictions between the groups are proper and maintained. There is a serious burden to search both species cover by claim 2 as shown by the second restriction. The luminescent inks and non-luminescent inks have difference classifications, which is *prima facie* evidence of a serious burden. The election of species is maintained.

The requirement is still deemed proper and is therefore made FINAL.

Claims 4, 114-116, 119 and 121 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and species, there being no allowable generic or linking claim.

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 1-3, 5-113, 117, 118, 122-157 of this application.

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The provisional application teaches inks which require the presence of a luminescent colorant, a color-changeable non-luminescent colorant and a compound which both decreases the intensity of the luminous emission and effects the color change, such as an photoacid generating compound or require the presence of a colored luminescent colorant where the visible color is changeable and a compound which, when activated by energy, releases species that both decreases the intensity of the luminous emission and effects the color change. It also teaches the composition of claim 120. Claims 1-3, 5-113, 117, 118, 122-157 include embodiments which are different from those disclosed by the provisional application. Claim 120 and the claimed embodiments to inks which require the presence of a luminescent colorant, a color-changeable non-luminescent colorant and a compound which both decreases the intensity of the luminous emission and effects the color change, such as an photoacid generating compound or require the presence of a colored luminescent colorant where the visible color is changeable and a compound which, when activated by energy, releases species that both decreases the intensity of the luminous emission and effects the color change or which read upon the composition of claim 120 have an effective filing date of 13 March 2003. The other rest of the claimed embodiments have an effective filing date of 12 March 2004.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: There is no clear teaching in the specification that the species act to decrease the intensity of the emission from the luminescent compound, that the onium salt can be iodonium salts or sulfonium salts each having at least one aryl group, that the non-luminescent colorant can be titanium dioxide, any triarylmethane dye or any xanthene dye.

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Claim 123 is objected to because of the following informalities: "anthracine" should be rewritten as "anthracene" to be consistent with the teachings in paragraph [0052] of the specification. Appropriate correction is required.

Claims 12-14, 18-22, 134, 137-143 and 157 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejected claims are indefinite since these claims are all directed to characteristics that would require the presences of the optional non-luminescent colorant of claim 1 but they do not state that it is actually present.

The Examiner is interpreting the term 'colorant' as being limited to compounds that have a visible color, as opposed to "invisible" fluorescent colorants which are colorless. This interpretation is based on claims 75 and 76.

The phrase "suitable for ink jet printing" in claims 1 and 2 does not limit the inks of claims 1-3, 5-105 and 122-157 to ink-jet inks since this phrase indicates the intended use of the ink and thus does not impart any physical properties to the ink.

In claims 117 and 118, the deactivation energy device is any device which imparts sufficient energy to cause the energy active compound to generate the species that alters a characteristic of the colorant or luminescent compound.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1, 5, 12, 13, 23, 24, 39, 40, 41, 46-48, 50, 51, 76, 77, 83, 84, 99-102, 104, 127 and 135-139 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,296,275.

This reference teaches a phototranschromic ink comprising an optical brightener, which is a colorless luminescent compound, a binder resin, a pH sensitive dye, a photoacid progenitor, a solvent, wetting agents and hiding pigments, such titanium dioxide. When the ink is exposed to ultraviolet radiation, the photoacid progenitor releases protons, i.e. an acid radical, which acts to change the H of the ink and thus change the color, or in other words the absorption characteristic, of the pH sensitive dye. Optical brighteners are colorless luminescent dyes that emit ultraviolet to blue light when exposed to ultraviolet light. The solvent can be glycols, gum esters or ester alcohols, which are volatile organic solvents. The binder resin can be polyvinyl alcohol, vinyl pyrrolidone polymers, urethanes or acrylics. The pH sensitive dye can be p-methyl red or ethyl orange, which are azo dyes or lissamine green or phenol red, such are triarylmethane dyes. The claimed ink reads upon that taught.

Claims 1-3, 5-7, 15, 16, 23, 24, 39, 40, 41, 43, 44, 50-53, 68, 73, 74, 75, 104, 105, 122, 127, and 128 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,028,792.

This reference teaches an ink comprising a pH sensitive dye, a photoacid progenitor, a binder resin, a surfactant and a solvent. When the ink is exposed to ultraviolet radiation, the photoacid progenitor releases protons, i.e. an acid radical, which acts to change the H of the ink and thus change the color, or in other words the absorption characteristic, of the pH sensitive dye. The pH sensitive dye can be fluorescent colorant dyes, such as congo red (an azo dye), or aniline blue. These dyes emit ultraviolet to blue light when exposed to ultraviolet light. The binder can be a polyvinyl alcohol. The claimed ink reads upon that taught.

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Claims 1-3, 5-11, 15-17, 22, 39-41, 43, 44, 46-51, 68-75, 99-113, 117, 118, 146, 147, 149, 153 and 155 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 5,702,511.

This reference teaches an ink jet ink comprising a fluorescent colorant, a photochromic colorant which upon exposure to ultraviolet radiation alters the emission of the fluorescent colorant, a solvent, a binder resin and a conductivity agent. The taught photochromic colorant reads upon the claimed energy active compound since the second color of the photochromic colorant would be the claimed "species" since it alters the emission of the fluorescent colorant. The taught photochromic dye is soluble in the solvent. The solvent can be ethanol or methyl ethyl ketone and the binder resin can be a polyketone resin, a phenolic resin or an acrylic resin. Example 1 and 3 teach examples where the second color of the photochromic colorant decreases the intensity, emission and absorption of fluorescent colorant. While the reference does not teach the properties of claims 106-113, it must inherently have a viscosity, resistivity, sonic velocity and surface tension that falls within the claimed range since these ranges are the conventional ranges, as shown by column 4, lines 53-59 of U.S. patent 5,939,468. The amounts in the examples fall within that of claim 146 and 155. Finally, this ink is used to authenticate objects. It is applied to an object using an ink-jet printer and it is exposed to ultraviolet radiation, such as from a lamp and the color change is read by a reading device, such as a bar code reader or a post mark reader. This is claimed system. The reference teaches the claimed ink and system.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 25-38, 85-98, 140-143, 146, 147 and 151-154 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,296,275

As stated above, this reference teaches an ink comprising 5-10 wt% of a resin binder, 0.5-10 wt% of a photoacid progenitor, 1-5 wt% of a pH sensitive dye, up to 2 wt% of fluorescent brightener and 50-95 wt% of a solvent. This composition overlaps that of claim 146. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). While the reference exemplifies nitro-substituted aromatic aldehydes, it teaches the use of any photoacid progenitor. Thus one of ordinary skill in the art would have found it obvious to use any well known photoacid progenitor, such as those claimed. While the reference does not teach the pH sensitive dyes of claims 140-143 and 152, the reference teaches that any known pH sensitive dye can be used, which includes those claimed. Thus one of ordinary skill in the art would have found it obvious to use the claimed well known pH sensitive dyes in the taught ink. The reference suggests the claimed ink.

Claims 1, 2, 25-38, 52-67, 123-133, 146, 150, 153 and 154 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,028,792.

As stated above, this reference teaches an ink comprising 50-99 wt% of a resin binder, 1-40 wt% of a photoacid progenitor, 0.1-5 wt% of a pH sensitive dye and 0.5-50 wt% of a solvent. This composition overlaps that of claim 146. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191

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USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). While the reference exemplifies nitro-substituted aromatic aldehydes, it teaches the use of any photoacid progenitor. Thus one of ordinary skill in the art would have found it obvious to use any well known photoacid progenitor, such as those claimed. While the reference does not teach the pH sensitive fluorescent dyes of claims 123-133 and 150, the reference teaches that any known fluorescent, pH sensitive dye can be used, which includes those claimed. Thus one of ordinary skill in the art would have found it obvious to use the claimed well known pH sensitive fluorescent dyes in the taught ink. The reference suggests the claimed ink.

Claims 1-3, 103, 123-133, 148, 150 and 156 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,702,511.

As stated above, this reference teaches the claimed ink. It does not teach the claimed conductivity agent, but it teaches the use of any known ink jet ink ammonium bromide conductivity agents. Thus one of ordinary skill in the art would have found it obvious to use the claimed agent, which is a ink jet ink ammonium bromide conductivity agent. The reference teaches the use of any fluorescent which is red or any other color except blue or green. This includes the dyes of claims 123-133 and 150. Thus one of ordinary skill in the art would have found it obvious to use any of the claimed fluorescent dyes as the fluorescent dye in the taught ink. Column 3, lines 46-48 teach the solvent can be any ketone, which would include acetone. One of ordinary skill in the art would have found it obvious to use acetone as the solvent in the taught ink. The reference suggests the claimed ink.

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Claims 42, 45, 78-82, 103, 120, 144 and 145 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

There is no teaching or suggestion of the claimed ink compositions.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
July 25, 2005


C. Melissa Koslow
Primary Examiner
Tech. Center 1700